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ABSTRACT

The computer applications that hold most promise for writers form a large class of utility programs, including word processing and text editing. However, the computer can pose some problems for the student in the writing center. What proportion of writing center students arrive ready to work at the keyboard? Will learning to type present special problems to students already alienated from writing? What learning will students transfer from computer assisted writing to the old fashioned kind done with pencil? The computer can tell how long the sentences are and can calculate a readability rating according to a mathematical formula, but it cannot take into account factors far more relevant to communication. It is by no means clear how stylistic programs would aid progress toward the primary goals for writing center students--fluency and development of ideas, sense of audience and voice, or shaping and copyreading, to name a few. Human dialogue programs are even more difficult to assess since they differ greatly, not only in quality but also in subject, and range from teaching logic to leading a student through heuristic procedures for invention. The computer may not be the great panacea for the problems students bring to the writing center. Teachers should take a critical attitude toward educational computing--continuing to learn about it while asking questions. Pedagogy should take precedence over technology. (HOD)

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WHAT SHOULD COMPUTERS DO IN THE WRITING CENTER?

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There is no reason to keep you in suspense about my answer to the question posed in the title of this talk. I would say, "We don't know." Not the most satisfying answer, perhaps, but the best I can offer. It may strike you as too reserved, even negative, a judgment. What about all those computer programs we read about in every journal from College English to Educational Technology? Those programs are pioneering efforts, some with lessons to teach us, but the question of what computers should do cannot be answered by pointing to programs. The issues that arise at the intersection of writing, learning, and computing are too various and complex for such an answer; and, as a profession, we teachers of writing have hardly begun to consider such issues seriously. I hope to suggest some of their range by examining ways writing teachers already use computers.

I will recommend no particular computer applications, and I will speak against some. I will not make any promises about what computers can do, although I will try to raise doubts about some such promises. In emphasizing the things we don't know, the questions we can't answer, the issues just emerging, my goal is not to argue against using computers in the writing center. Rather, I want to encourage you to take a critical attitude

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toward educational computing: to learn all you can about it and to keep asking questions.

The status and promise of educational technology make it especially difficult to maintain a critical attitude. An article in the current College Composition and Communication introduces one program by explaining that the authors wrote it "To take full advantage of the current computer craze." Although the authors go on to offer other arguments for computer-assisted instruction, the initial statement of purpose exemplifies how an obvious "bandwagon" effect contributes to crazes in education. And it is all too easy to glorify means while neglecting proper ends, to select an attractive instructional medium without considering how it shapes what students learn. Alfred Bork, professor of physics at the University of California at Irvine and long a prominent leader in educational computing, observes that "A tendency to allow technology control is inherent in employing technological aids to education," and he warns, "This trend is a mistake . . . Pedagogy should take precedence over technology in all cases." We must keep our goals clearly in view, fitting methods to the needs of students, and nowhere is that general principle truer than in the writing center. Our decisions about computers will test how well we understand the special needs of the basic writing students, the second language students, the apprehensive and the underprepared, whom we teach. By briefly surveying some current computer applications, we can see how little we know about meeting those special needs with computers.

The applications that hold most promise for writers form a large class of utility programs including word processors and text editors. They allow one to revise and edit without the drudgery of recopying. Writing looks neat and professional, no matter how troublesome one's handwriting or how often the text has been altered. Programs can automatically check spelling and even some points of grammar. And so on. For obvious reasons, word processing has quickly gained a foothold in writing instruction, as in offices and even homes. Many of us who already use and enjoy computerized text editing for our own writing see such programs as the ultimate tools.

So much for the good news. Now for some questions. Let us start where Mina Shaughnessy began her description of basic writing students in Errors and Expectations, with the physical act of writing. For students who have serious trouble with that act, she recommends not only much practice, pen in hand, but also an intensive summer typing course, since (as she says) "few students from inferior high schools learn how to type." What proportion of writing center students arrive ready to work at the keyboard? Are we prepared to teach the others to type? Does learning to type present special problems to students already so alienated from writing?

These questions point to a broader concern: At what point in a writer's development are the advantages of a word processor likely to outweigh the problems of learning to use one? The power of a computer can ease certain constraints that writers labor under, but many factors influence how writers experience

those constraints. Will every writer find text editing equally, or at all, liberating? Richard M. Collier reports in the May CCC that using a text editor to revise helps students surprisingly little, helping the weakest writer least of all. Having said that, I should note that several aspects of Collier's study cast strong doubt on the validity of his conclusions. The study involved only four students, far too small a sample to support his generalizations. Moreover, the article says little about how Collier introduced students to revising or to using a text editor, and it seems they received minimal direction or advice. Further instruction might have produced quite different results. Yet however shaky its conclusions, the study does remind us that such factors as a student's composing style and competence may determine not only how he or she employs a text editor but even whether the student will find it at all useful.

We also need to consider the relationship between writing that students do on a computer and their other writing. If word processing became a basic component of writing center instruction, would students learn to depend too much on the computer? Or to adopt a different perspective, what learning will students transfer from computer-assisted writing to the old-fashioned kind done with pencil in hand? What can we do to encourage such carryover? Such editing programs as spelling- and grammar-checkers raise these questions in an especially controversial form. Some computer enthusiasts, like Colette A. Daiute of Teachers College, would have students rely on programs to check for errors, allowing students to concentrate on larger

concerns. In the article leading off the issue of CCC that contains Collier's study, Daiute writes that "Error identification programs offer a model for self-monitoring because they identify possible problems and sometimes make guesses about the corrections." Yet it is hard to see how the programs could model proofreading, for they identify trouble spots without showing how one finds them. Daiute's further assertion that the programs leave "all decisions up to the writer" seems questionable, since the computer is given primary responsibility for determining where problems lie. If we hope to help students become better critical readers (and revisers and editors) of their own writing, what part can computerized error identification play in that process? Teachers may discover a place for it, but that discovery seems far more problematic than Daiute recognizes.

With Daiute's article before us, we might also consider her claim that a text editor "seems like an audience," encouraging writers to think about readers. Audience is a key concept in our teaching, for something Shaughnessy says about basic writing students applies in some degree to all our students: "For the BW student, academic writing is a trap, not a way of saying something to someone." Since we must provide students with a responsive audience, Daiute's claim seems to touch on the heart of our enterprise, but her championing of computers leads her to rely on a most impoverished notion of audience. According to her, "The writer knows that the computer is not really an audience, but the machine's responsiveness alerts the writer to

the concerns of a potential audience." Yet as she describes it, a computer responds only by carrying out commands, reporting what tasks it has completed, and waiting for further commands. What "concerns of the potential audience" can such "responsiveness" bring to the writer's attention? Similarly, she mentions that the blinking of the cursor "reminds the writer that the program is waiting to receive more input, which encourages the writer to say more and to consider whether what is written makes sense." How does the blinking of one little light on the screen do all that? And when she says that error identification programs offer "support similar to the interactiveness of a speech situation," she conjures up the bizarre image of a conversation in which one participant does nothing but detect the other's grammatical errors. What "speech situation" does that resemble, and what "support" does it offer? Daiute certainly does not have in mind the audience we need to provide writing center students.

One type of utility program does offer writers direct feedback, by reporting on stylistic features of a text. The most famous is HOMER, developed in the UCLA Writing Program directed by Richard Lanham. Lanham is best known in writing circles for his so-called "Paramedic" approach to curing the ills of what he calls "Official Style," the bloated prose attacked forty years ago in the familiar Orwell essay "Politics and the English Language." The HOMER program performs a paramedic analysis of a text by calling attention to characteristics of Official Style: "to be" verbs, prepositions, certain nominalizations, and so on. Users can select the features to be identified and the format of

the output, which includes a statistical summary and evaluative comments like "Your reluctant use of 'to be' verbs thrills me." (Anyone who studies educational computing will notice that the tone of such comments poses a big problem for most program composers.) HOMER is but one of many style programs, each analyzing prose in its own terms, whether mean words per T-unit or a rating on a readability scale.

Like word processors, such programs can help mature writers revise. However, as students of language, we should recognize the limits of any analysis based on surface features of a text. Style and substance, once distinguished, are not easily reunited. The relationships between syntax, semantics, and pragmatics form large philosophical themes that I haven't time to explore, but they are crucial in thinking about what computers can and cannot do with language, and as a starting point I recommend the critique advanced in Stanley Fish's "What Is Stylistics and Why Are They Saying Such Terrible Things About It?" and its sequel, "What is Stylistics and Why Are They Saying Such Terrible Things About It? Part II." Yet without a philosophical digression, we can observe the decisive value of what style programs leave out by considering the example of readability. As Anne Falke explains in a review of reading research,

> People assessing how readable a text is usually equate long sentences with difficult reading and short sentences with easy reading, but it seems not so much to matter how long sentences are, but rather how predictable they are. Thus, short, terse sentences packed with technical vocabulary which are not set in a redundant context--a context which repeats enough information to be predictable--will be more difficult to read than will a very long, grammatically

> complex sentence in which the words are familiar and the order predictable.

The computer can tell how long the sentences are and can calculate a readability rating according to a mathematical formula, but it cannot take into account factors far more relevant to communication. Any attempt to move from formal analysis of sentences to meaning--meaning in a human context--will encounter such difficulties.

Whatever the general limitations of stylistic description, we need to ask about using style programs in writing centers. How will the stylistic data compiled by computers help our students develop as writers? If some such data did seem useful, which data and in what form? There seems little point in telling a basic writing student that she has written 205 words in 17 sentences for an average of 12.05 words per sentence--a typical HOMER item. It is by no means clear how style programs would aid progress toward our primary goals for writing center students: fluency and development of ideas, a sense of audience and voice, shaping and copyreading, to name a few basics. Stylistic revision in Lanham's sense seems a more likely subject for a regular composition course, or even an advanced one, than for a writing center. And when we respond to student writing, even on occasion to its stylistic features, we need to shape our responses thoughtfully, rhetorically, so that our students experience academic writing as "a way of saying something to someone." Even more, as a way of creating a dialogue. Can we

define a useful role for computer analysis of prose style in that dialogue?

Human dialogue serves as the model for a large class of computer programs, including many used by writing teachers, and this is the most difficult mode to assess from our perspective. For one thing, existing programs differ greatly not only in quality but in subject, doing everything from teaching logic to leading a student through heuristic procedures for invention. For another, dialogue programs come from the extremely controversial field of AI-- artificial intelligence. I haven't time here to launch into AI, but I urge you to look into current debates about the prospects for artificial intelligence. Many of the issues about language and cognition concern us directly. As long as the limits of AI remain so uncertain, the future of dialogue programs will remain unclear. However, a brief historical note will suggest some basic issues.

The first notable dialogue program was ELIZA, completed in the mid-1960's by Joseph Weizenbaum, who named it for Eliza Doolittle. He programmed it to play (or, as he says, parody) the role of a Rogerian psychotherapist, and the reactions to ELIZA's performance shocked Weizenbaum (a professor of computer science at MIT) into becoming one of the sharpest critics of what he calls the "artificial intelligentsia." Weizenbaum's Computer Power and Human Reason (1976) is one of the two most notorious books in AI. (I'm sorry I don't have time to talk about the other, What Computers Can't Do by Hubert Dreyfus.) In the introcution to his book, Weizenbaum describes the three shocks

that led him to concern himself with questions of what computers cannot and should not do. Each shock has clear significance for teachers:

> 1. A number of practising psychotherapists seriously believed the . . . program could grow into a nearly completely automatic form of psychotherapy.
>
> 2. I was startled to see how quickly and how very deeply people conversing with [ELIZA] became emotionally involved with the computer and how unequivocally they anthropomorphized it.
>
> 3. Another widespread and, to me, surprising reaction to the ELIZA program was the spread of a belief that it demonstrated a general solution to the problem of computer understanding of natural langauage . . . This reaction to ELIZA showed me more vividly than anything I had seen hitherto the enormously exaggerated attributions an even well-educated audience is capable of making, even strives to make, to a new technology it does not understand.

Weizenbaum's argument against much AI is ultimately moral. He describes as "simply obscene . . . all projects that propose to substitute a computer system for a human function that involves interpersonal respect, understanding, and love." Weizenbaum will appear as a principal speaker at the NCTE convention in Denver this November, and I would expect his message to be that our teaching is just such a human function. That does not mean that we cannot use computers in teaching, but the story of ELIZA emphasizes the seriousness of Alfred Bork's reminder that educational technology has a way of taking control.

Naturally, to consider seriously the usefulness of dialogue programs, it would be necessary to look closely at particular

examples--for instance, to study some transcripts of student-computer conversations. You will find such examples in articles extolling the virtues of various programs. We could even begin with Weizenbaum's example of ELIZA's dialogue with a young woman who decides that the computer reminds her of her father. But time will not allow that, so I leave it to you. I will just add one final set of questions. What things do we accomplish in student-teacher dialogues that computers can do? Which can they do well? And which of those, if any, should they do?

That brings us back to my original question: What should computers do in the writing center? As you all know, it is frustrating to try to discuss so rich a topic in so brief a talk. For instance, I have had to ignore the applications that probably come into your mind first when you think about computers in schools: drill and practice programs, or CAI (computer-assisted instruction). CAI is like an electronic workbook, with well-known advantages over printed workbooks, but workbooks are workbooks, with little to be said in their favor. You probably know the arguments pro and con on that subject already, and even if you didn't, to review them would take another talk. In fact, <u>anything</u> more would take another talk, because my time is up.

I invite your questions.

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